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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,017	03/16/2004	Alan S. Bitzer	C-2812	2810

7590 09/19/2005
M.P. Williams
210 Main Street
Manchester, CT 06040

EXAMINER

WALKER, KEITH D

ART UNIT PAPER NUMBER

1745

DATE MAILED: 09/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/802,017

Applicant(s)

BITZER ET AL.

Examiner

Keith Walker

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2 and 3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2 and 3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Summary

Claims 1, 4 & 5 have been cancelled by applicant and Claims 2 & 3 are pending in the application.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 3 is rejected under 35 U.S.C. 102(b) as being anticipated by US Publication 2002/0136942 (Kashiwagi).

Kashiwagi teaches a fuel cell stack system fed by a hydrogen supply through a pressure control valve and an ejector. The ejector has two inlets for receiving pure fuel and effluent from the stack and an outlet for supplying the fuel cell stack. Anode effluent from the fuel cell stack is routed through a pump back to the ejector (Fig. 1, Abstract, Para. [0018-0022]). The pressure sensor at the output of the fuel cell stack controls the pressure regulator located at the input of the ejector (Fig. 1, Para. [0018, 0026-0028]).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Kashiwagi.

The teachings of Kashiwagi as described above are incorporated herein.

Kashiwagi doesn't speak directly to the use of a pressure sensor located before the fuel cell stack.

The pressure sensor is used to detect the pressure difference created when more power is required of the fuel cell and the reactants are used faster than supplied. This vacuum will be present in the fuel line both before and after the fuel cell. So while the pressure sensor is taught as placed after the fuel cell, rearranging the sensor to locate it before the fuel cell is just a rearrangement of parts. It would have been obvious to one having ordinary skill in the art at the time the invention was made to place the sensor before the fuel cell, since it has been held that rearranging parts of an invention involves only routine skill in the art (*In re Japikse*, 86 USPQ 70).

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Kashiwagi in view of US Patent 3,961,986 (Waldman).

The teachings of Kashiwagi as described above are incorporated herein.

Kashiwagi does not speak directly to the use of a pressure sensor before the fuel cell.

Waldman teaches using a pressure sensor before the fuel cell to control the pressure regulator supplying the fuel (Fig. 1, 4:15-28).

The motivation to use the pressure sensor is to increase the efficiency of the ejector by eliminating any backpressure on the ejector.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the fuel cell system of Kashiwagi with the pressure sensors of Waldman to make a better operating ejector by eliminating the back pressure through the monitoring of the fuel pressures before the fuel cell.

Response to Arguments

6. Applicant's arguments with respect to claims 2 & 3 have been considered but due to amendments are moot in view of the new ground(s) of rejection.

7. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., remote sensed pressure sensor) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The instant application claims regulating the inlet pressure in response to the pressure of the reactant gas at either the gas flow inlet or the gas flow outlet. As stated above, Kashiwagi teaches varying the inlet pressure of gas to the fuel cell based on the flow of gas at the outlet of the fuel cell. Measuring the flow is analogous to the measure of pressure, since they are related through the Bernoulli equation and one can be used to calculate the other. Further, flow devices use pressure differentials to calculate the

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flow so the pressure is measured. Therefore, the claims are anticipated and obvious over the teachings of Kashiwagi.

Applicant argues Waldman doesn't teach regulating the pressure of the reactant gas at the primary inlet based on the pressure of reactant gas flow at field inlet. As discussed above, Waldman teaches changing the reactant gas pressure at the primary inlet (to the ejector) based on the pressure at the inlet of the fuel cell. The fact that Waldman's system also comprises a reformer does not detract from the teaching of adjusting the pressure at the "primary inlet" based on the pressure before it enters the fuel cell. Therefore the claim is obvious over the teachings of Waldman and Kashiwagi.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith Walker whose telephone number is 571-272-3458. The examiner can normally be reached on Mon. - Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


PATRICK JOSEPH RYAN
SUPERVISORY PATENT EXAMINER

KW